## REMARKS

The Examiner has objected to the Declaration with regard to the priority number. Applicant notes that the difference in the priority number is minor and that both numbers correspond to the same priority application. Applicant is enclosing a new Declaration as signed by the inventors where the priority number corresponds to the certified copy of the Priority Document.

The specification and claims have been amended to improve the style of this application. Applicant thanks the Examiner for the careful reading of this application, for pointing out discrepancies, and for providing suggestions.

The independent claims in this application have been rejected as either being anticipated by Dreyer, or being obvious over Dreyer in view of Eckstrom.

The present independent claims have either been amended or added to set forth two detectors receiving information in two different wavelength ranges after that radiation has passed through a cuvette. Structure and/or method steps are then set forth to determine the cross sensitivity of the second detector with regard to a first group of gases. The first group of gases have absorption coefficients in the first wavelength range. When the gas mixture is to be analyzed, the first signal from the first detector is used to determine the concentration of the first group of gases in the gas mixture. The concentration of the second group of gases is determined from the second signal, and from the cross sensitivities in combination with the first signal.

Applicant has reviewed Dreyer, and finds no teaching nor suggestion in Dreyer of any

method steps or structure for determining cross sensitivity of a second detector to a first group of gases, and then using the signal from the second detector, in combination with the cross sensitivity and the signal from the first detector, to determine the concentrations of the second group of gases. Likewise Applicant has reviewed Eckstrom, and also finds no teaching nor suggestion of any method steps or structure for this determining of the second group of gases using a first and second signal from first and second detectors, and cross sensitivities.

Applicant further notes that it would not be obvious to combine Dreyer and Eckstrom. Eckstrom describes using several different cells, where one of the cells is a sample cell, and the other is a reference cell. Dreyer does not have a sample cell and a reference cell. To use two different cells in Dreyer, would change the principal of operation of Dreyer. Dreyer specifically has two rays passing through the same gas flow, and these two rays must act on the same gas flow in order for Dreyer to operate properly. Therefore a person of ordinary skill would not be led to modify Dreyer to use the techniques of Eckstrom, since the techniques of Eckstrom require a sample cell and a reference cell, and such is not present in Dreyer.

Eckstrom does describe crosstalk connections in column 10. Eckstrom talks about several different wavelength ranges, where some ranges appear to overlap, and other ranges appear to be separate. It appears that when Eckstrom describes correcting measurements because of crosstalk, Eckstrom is applying this correction when the ranges overlap, column 10 line 65 onwards. The present invention is different, because the claims clearly state that the first and second wavelength ranges are different or separate. The specification indicates that a preferred first wavelength range is between 3 micrometers and 5 micrometers, and that the

second range is preferably between 8 and 11 micrometers. It appears that the crosstalk in Eckstrom occurs because of the overlap in the ranges and any crosstalk correction is performed to remove effects of this overlap. Applicant finds no teaching nor suggestion of crosstalk correction in Eckstrom when wavelengths ranges are different or separate. Furthermore, it appears that the crosstalk in Eckstrom is with regard to a reference signal and not a signal with regard to a different detector. Therefore the crosstalk correction of Eckstrom is not similar to the calculating of gas concentrations in a second group of gases using the signal from a second detector, and the cross sensitivities in combination with the signal from a first detector. This is especially true, where both signals act on the same gas mixture.

Applicant further notes that the crosstalk correction in Eckstrom relies on typical relative abundances of two different isotopes. Therefore the person of ordinary skill in the art is led away from calculating a cross sensitivity of a second detector to a first group of gases from a second signal measured during the passing of a known quantity of the first group of gases, as set forth in claim 20. Claim 20 therefore further defines over the prior art.

Claims 3, 4, 9 and 10 are rejected as being obvious over Dreyer in view of Miyazaki and Huiku.

Applicant has reviewed the rejection, and does not find the rejection to use Huiku. Applicant further does not find Huiku to be listed as a reference either by the Applicant, or in the Office Action. It is Applicant's position therefore that Huiku does not form a part of this rejection.

Claim 4 sets forth that the radiation emitted by the first infrared optical radiation source

extends at right angles to the radiation emitted by the second infrared optical radiation source and travels over a path of different length.

The rejection uses Miyazaki to describe orthogonal paths, and in particular column 4 lines 52 - 63. The rejection indicates that it would have been obvious to provide the orthogonal paths in the analyzer of Dreyer in order to rapidly introduce and stabilize a gas sample in the sample cell.

The reference of Dreyer relates to the measuring of a flow as it passes through a sample holder. Dreyer clearly shows in the sole figure, that the gas is to constantly flow through the sample holder 4. Miyazaki on the other hand describes measuring a gas where the sample is static and does not flow. The purpose of the luminous flux in Miyazaki column 4 being transmitted in the longitudinal and lateral direction, is so that the gas can be rapidly introduced into the sample cell and rapidly stabilized in the sample cell. This is indicative of a static sample. Any gas in Dreyer is not stabilized. Instead the gas in Dreyer is constantly flowing through the sample cell. Since the lateral and longitudinal flux in Miyazaki is to stabilize the sample gas, and Dreyer does not stabilize a sample gas, it would not be obvious for a person of ordinary skill in the art to use the longitudinal and lateral direction of the flux of Miyazaki, and apply that to Dreyer. Since there is no need to rapidly stabilize the gas in Dreyer, there is no incentive in the prior art to combine Dreyer and Miyazaki. Claim 4 therefore cannot be considered obvious in view of the prior art.

Applicant also notes that another significant difference between Dreyer and Miyazaki is that Dreyer describes two different light sources cyclically operating at two different

frequencies. This is shown by the wave forms $f_1$ and $f_2$ in Dreyer. Consequently, Dreyer has two different lamps so that irradiation in the different spectral ranges can be turned on and off at two different cycle frequencies $f_1$ and $f_2$. Miyazaki clearly describes the benefits of having a common light source in column 3 lines 41 - 47. Since Miyazaki teaches the advantages of one lamp, and Dreyer teaches two different lamps, a person of ordinary skill in the art would not be led to Miyazaki from Dreyer.

Applicant notes that Dreyer uses cyclic operating of the light sources to perform measurements with every breath of a patient. It appears that Miyazaki cannot operate that fast, and therefore Miyazaki further cannot lead a person to modify Dreyer. Therefore the modification of Dreyer to have the different lengths of Miyazaki, would not be obvious.

New claim 19 sets forth that the radiation emitted by the first and second radiation sources travel along first and second paths, where the lengths of those paths are chosen to cause absorption coefficients of the radiation to be substantially identical. Applicant has reviewed Miyazaki, and finds no teaching nor suggestion of absorption coefficients, and adjusting lengths to have the absorption coefficient be substantially identical.

Claim 19 further sets forth that the lengths of the first and second optical paths are determined as a function of expected concentration ranges of the gases to be measured, and from activated cross sections of these gases. Applicant finds no teaching nor suggestion of activation cross sections of gases in Miyazaki, and therefore claim 19 further defines over the prior art.

It is only the present invention which has recognized that activation cross sections of

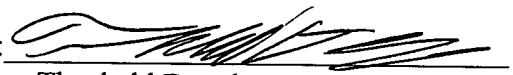
gases are important in determining the lengths of the first and second optical paths. Even if optical paths have the same ratio as the expected concentrations, Applicant has found that this is not always sufficient to have absorption coefficients be substantially identical. Instead Applicant has found that the activation cross sections of the gases is important, and taking into account the activation cross sections can increase the accuracy of the gas measurements. Since it is only Applicant who has recognized that the activation cross sections of the gases are significant, claim 19 further defines over the prior art.

With this Amendment Applicant is also submitting an Information Disclosure Statement for references cited in a corresponding German Patent Application. Applicant also wishes to point out to the Examiner that a corresponding United Kingdom Patent Application has been granted as UK Patent No. 2 368 392.

If the Examiner has any comments or suggestions which would further favorable prosecution of this application, the Examiner is invited to contact Applicant's representative by telephone to discuss possible changes.

At this time Applicant respectfully requests reconsideration of this application, and based on the above amendments and remarks, respectfully solicits allowance of this application.

Respectfully submitted
for Applicant,

By: 

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